

University of Groningen

## Atmospheric transport and chemistry of trace gases in LMDz5B

Locatelli, R.; Bousquet, P.; Hourdin, F.; Saunio, M.; Cozic, A.; Couvreux, F.; Grandpeix, J. - Y.; Lefebvre, M. -P.; Rio, C.; Bergamaschi, P.

*Published in:*  
Geoscientific Model Development

*DOI:*  
[10.5194/gmd-8-129-2015](https://doi.org/10.5194/gmd-8-129-2015)

**IMPORTANT NOTE:** You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

*Document Version*  
Publisher's PDF, also known as Version of record

*Publication date:*  
2015

[Link to publication in University of Groningen/UMCG research database](#)

### *Citation for published version (APA):*

Locatelli, R., Bousquet, P., Hourdin, F., Saunio, M., Cozic, A., Couvreux, F., Grandpeix, J. -Y., Lefebvre, M. -P., Rio, C., Bergamaschi, P., Chambers, S. D., Karstens, U., Kazan, V., van der Laan, S., Meijer, H. A. J., Moncrieff, J., Ramonet, M., Scheeren, H. A., Schlosser, C., ... Williams, A. G. (2015). Atmospheric transport and chemistry of trace gases in LMDz5B: evaluation and implications for inverse modelling. *Geoscientific Model Development*, 8(2), 129-150. <https://doi.org/10.5194/gmd-8-129-2015>

### **Copyright**

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

### **Take-down policy**

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

*Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.*



*Supplement of*

## **Atmospheric transport and chemistry of trace gases in LMDz5B: evaluation and implications for inverse modelling**

**R. Locatelli et al.**

*Correspondence to:* R. Locatelli ([robin.locatelli@lsce.ipsl.fr](mailto:robin.locatelli@lsce.ipsl.fr))

## SUPPLEMENTARY MATERIALS

Three figures are added here. Figure 1 illustrates the sensitivity of  $^{222}\text{Rn}$  concentrations to the vertical diffusion scheme at Heidelberg. Figure 2 shows the action of the thermal plume model on the vertical distribution of  $^{222}\text{Rn}$  concentrations. Figure 3 illustrates the sensitivity of the NP version of LMDz to external meteorological forcings by showing comparisons of two-metres temperatures simulated by NP and TD with ERA-Interim reanalysis.

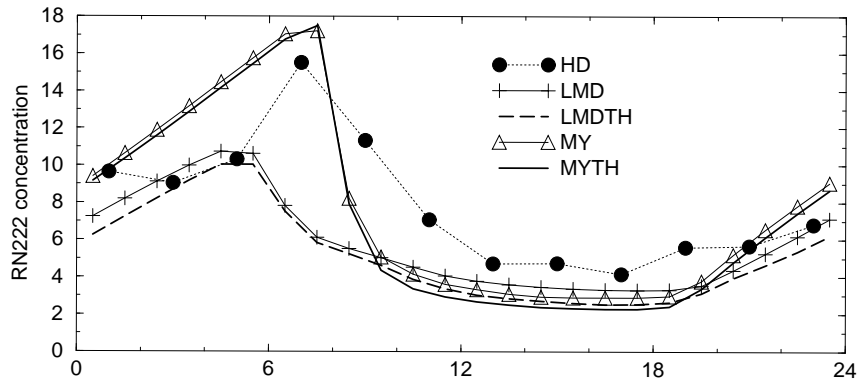


Figure 1: Mean  $^{222}\text{Rn}$  diurnal cycle at Heidelberg in the beginning of August 1998. LMD refers to Louis (1979) only ; LMDTH refers to Louis (1979) combined with the thermal plume model ; MY refers to Yamada et al. (1983) only ; MY refers to Yamada et al. (1983) combined with the thermal plume model. HD is the observations at Heidelberg.

